IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: McGROGAN, Stephen K.

Group Art Unit: 2186

Application No.: 10/713,650

Examiner: Not yet assigned

Filed: November 14, 2003

Atty Dkt. No. 0515805.0101

Title: **SEGMENTED GLOBAL AREA DATABASE**

* * * * *

PETITION TO MAKE SPECIAL UNDER 37 CFR §1.102(d)

The Honorable Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, VA 22313

Sir:

 Applicant hereby petitions to make the above-identified U.S. patent application special pursuant to MPEP §708.02(VIII). Applicants have submitted herein a detailed discussion of the references, which discussion points out, with the particularity required by 37 C.F.R. §1.111(b) and (c), how the claimed subject matter is patentable over the references pursuant to MPEP §708.02(VIII).

 If it is determined that the pending claims are not directed to a single invention, Applicants will make an election without traverse as required under MPEP §708.02(VIII)(B).

 Applicants submit that a pre-examination search has been made by a professional searcher in the following classes :

  Class 707, subclasses 1, 2, 10, 104.1, 200

  Class 711, subclasses 6, 118, 147, 203

 Enclosed herewith are copies of the following references which are deemed to be the most closely related to the subject matter encompassed by the present claims.

U.S. Patent No.	Inventor(s)
4,805,134	Calo et al.

5,426,747	Weinreb et al.
5,455,942	Mohan et al.
5,560,006	Layden et al.

DETAILED DISCUSSION OF THE REFERENCES

U.S. Patent 4,805,134 (Calo et al.)

Calo et al. discloses a host that deals primarily wth Videotex pages as its object of manipulation and utilizes a system of host caching. The pages are stored in a relational table controlled by a relational database management system. After a page is retrieved, it is optionally buffered in virtual memory (i.e., cache memory), thereby decreasing subsequent retrieval times (see column 18, lines 33-46). However, Calo et al. fails to disclose or suggest file segments that are unmapped according to a least-recently-used (LRU) criterion.

U.S. Patent 5,426,747 (Weinreb et al.)

Weinreb et al. discloses an apparatus and method for virtual memory mapping and transaction management for an object-oriented database system having at least one permanent storage means for storing data and at least one database, at least cache memory for temporarily storing data addressed by physical addresses, and a processing unit including means for requesting data utilizing virtual addresses to access data in the cache memory, means for mapping virtual addresses to physical addresses and means for detecting when data requested by the requesting means is not available at the virtual address utilized (see column 2, lines 24-38). However, Weinreb et al. fails to disclose or suggest file segments that are unmapped according to a least-recently-used (LRU) criterion.

U.S. Patent 5,455,942 (Mohan et al.)

Mohan et al. discloses in Figure 2 a high-speed, shared electronic store-in cache (store) 20 connected to database management processors 22 and 24, each of which include working memory in which a reserved addressable area comprises a buffer used by a locally-executing DBMS. Each of the processors 22 and 24 are coupled to a secondary storage 26. A directory 34

is maintained by management logic 30 to manage the contents of shared cache 32. The directory 34 is a table of multi-field entries, with each entry corresponding to a page. When a DBMS needs data, it first attempts to read it from the store 20, and if unsuccessful, then attempts to obtain the data from the secondary storage 26. Each attempt by the DBMS to read data from the store 20 results in management logic 30 inspecting the directory 34 for an entry corresponding to the requested page. If there is no entry for the page in the directory 34, the management logic 30 will create one, anticipating entry of the page into the shared cache 32. When the DBMS obtains the page from the secondary storage 26, it will process the page as required, and pass the page as a changed page to the store 20 for caching and maintaining coherency (see column 3, line 41 – column 4, line 12). However, Mohan et al. fails to disclose or suggest file segments that are unmapped according to a least-recently-used (LRU) criterion.

U.S. Patent 5,560,006 (Layden et al.)

Layden et al. discloses an entity-relation database system including a plurality of entity fields containing arrays of data elements, the data elements being related to each other in predefined sets, with each predefined set including data elements in at least two of the entity fields. At least one linked list defines the relationship between data elements between each of the predefined sets and provides a means for retrieving all of the elements of any selected predefined set from the two entity fields (see abstract). The system is preferably maintained in memory devices that permit access in the shortest possible period of time, including, through the use of virtual memory mechanisms, fast access memory devices (see column 5, lines 28-39). However, Layden et al. fails to disclose or suggest file segments that are unmapped according to a least-recently-used (LRU) criterion.

THE PRESENT APPLICATION

Embodiments of the present invention relate to, among other things, memory management methods and systems for object-oriented databases. For example, claim 5 depends from and incorporates the elements of claim 3, which claims a method for an application program to manage memory associated with an object-oriented database accessed by the
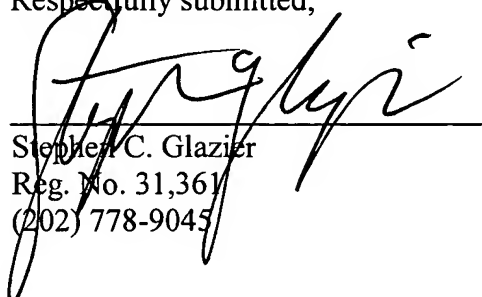
application program, the application program associated with an operating system, the method comprising connecting to a data repository of the database, the data repository including a plurality of memory-mapped file segments stored on at least one nonvolatile memory medium; registering a fault handler with the operating system, the fault handler associated with the data repository; catching, by the fault handler, a segmentation fault issued for an object referenced by the application program and resident in the data repository, the segmentation fault issued at an interrupt location in the application program; finding a file segment of the data repository that corresponds to the referenced object; mapping the found file segment into a main memory; and restarting the application program at the interrupt location. Claim 5 also depends from and incorporates the elements of claim 4, which claims unmapping a second file segment from the main memory before mapping the found file segment. Further, claim 5 claims that the file segments are unmapped according to a least-recently-used (LRU) criterion.

As discussed above, Calo et al., Weinreb et al., Mohan et al. and Layden et al. fail to disclose or suggest file segments that are unmapped according to a least-recently-used (LRU) criterion as claimed in claim 5.
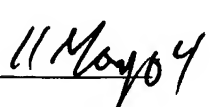
Therefore, the present application claims subject matter which is not disclosed, taught or suggested by the foregoing references and is patentable in light thereof. Accordingly, granting of the Petition to Make Special and expedited examination of the claims in the present application are earnestly solicited.

Respectfully submitted,

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Date: _____ 11 May 04

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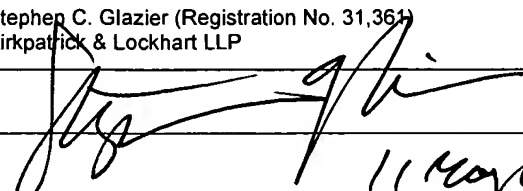
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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	10/713,650
Filing Date	November 14, 2003
First Named Inventor	McGROGAN
Group Art Unit	2186
Examiner Name	Not Yet Assigned

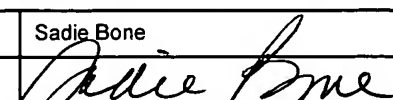| Total Number of Pages in This Submission		Attorney Docket Number	0515805.0101

ENCLOSURES *(check all that apply)*

☒ Fee Transmittal Form

  ☒ Fee Attached

☐ Amendment / Response

  ☐ After Final

  ☐ Affidavits/declaration(s)

☐ Combined Declaration and Power of Attorney

☐ Express Abandonment Request

☐ Information Disclosure Statement

☐ Certified Copy of Priority Document(s)

☐ Response to Missing Parts/ Incomplete Application

  ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53

☐ Assignment Papers *(for an Application)*

☐ Drawing(s)

☐ Declaration of Mailing by Express Mail

☒ Petition

☐ Petition to Convert to a Provisional Application

☐ Power of Attorney, Revocation Change of Correspondence Address

☐ Terminal Disclaimer

☐ Request for Refund

☐ CD, Number of CD(s) _____

☐ After Allowance Communication to Group

☐ Appeal Communication to Board of Appeals and Interferences

☐ Appeal Communication to Group *(Appeal Notice, Brief, Reply Brief)*

☐ Proprietary Information

☐ Status Letter

☒ Other Enclosure(s) *(please identify below):*
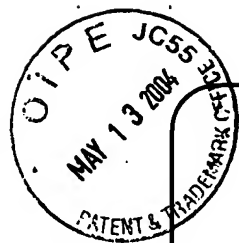
  Return Receipt Postcard

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Stephen C. Glazier (Registration No. 31,361) Kirkpatrick & Lockhart LLP
Signature	
Date	11 May 04

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this date: 5-11-04

Typed or printed name	Sadie Bone		
Signature		Date	5-11-04

DC-638805 v1 0515805-0101

FEE TRANSMITTAL
for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 130

Complete if Known

Application Number	10/713,650
Filing Date	November 14, 2003
First Named Inventor	McGROGAN
Examiner Name	Not Yet Assigned
Art Unit	2186
Attorney Docket No.	0515805.0101

METHOD OF PAYMENT (check all that apply)

☒ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☒ Deposit Account:

Deposit Account Number	50-1721
Deposit Account Name	Kirkpatrick & Lockhart LLP

The Director is authorized to: (check all that apply)
☐ Charge fee(s) indicated below ☒ Credit any overpayments
☒ Charge any additional fee(s) during the pendency of this application
☐ Charge fee(s) indicated below, **except for the filing fee** to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Fee ($)	Small Entity Fee Code	Fee ($)	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filling fee	

SUBTOTAL (1) ($) 0

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

		Extra Claims	Fee from below		Fee Paid
Total Claims	-20 ** =	0	X	18 =	0
Independent Claims	-3 ** =	0	X	86 =	0
Multiple Dependent			X	=	0

Large Entity Fee Code	Fee ($)	Small Entity Fee Code	Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 0

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Fee ($)	Small Entity Fee Code	Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet.	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive – unavoidable	
1453	1,330	2453	665	Petition to revive – unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	130
1807	50	1807	50	Processing fee under 37 CFR 1.17 (q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR § 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid **SUBTOTAL (3)** ($) 130

SUBMITTED BY				Complete *(if applicable)*	
Name (Print/Type)	Stephen C. Glazier	Registration No. (Attorney/Agent)	31,361	Telephone	202 / 778-9045
Signature				Date	11/May/04